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David L Light

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EXAMINER

PARVINI, PEGAH

ART UNIT

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1793

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/518,338 | <b>Applicant(s)</b><br>LIGHT ET AL. |  |
|                              | <b>Examiner</b><br>PEGAH PARVINI     | <b>Art Unit</b><br>1793             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-25 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Applicants' argument with reference to Cummings et al. as not being qualified as a prior art is found persuasive. Therefore, instant action has been made Non-Final, and new grounds of rejection has been presented below for claims 3-5 and 14-25.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-4 and 6-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/16511 to Johns et al. alone or in view of US Patent No. 5,169,443 to Willis et al.

Regarding claims 1, 3 and 4, Johns et al. teach kaolin product and the method of producing the same (Abstract; page 1, lines 3-5 and 25-30; page 2, lines 9-30), wherein the kaolin product is used in papers. Furthermore, the disclosed kaolin product has a shape factor of at least 30 and a steepness factor of at least 32 which have overlapping ranges with the ones instantly claimed (see page 7, lines 13-15 and 29-31).

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Additionally, the disclosed kaolin product is such that not more than 10% by weight has a particle size of less than 0.25 $\mu$ m and not less than 30% by weight has a particle size of less than 2 $\mu$ m (see claim 11 of the WO reference). As can be seen, the size criteria defined in claim 11 of this reference clearly reads on the claimed size values. It is noted that “not less than 30% by weight” reads on any and all values greater than 30wt%.

With reference to the limitation of about 10-20% having a particle size of less than 0.25 $\mu$ m, it is noted that the instant claim recites “about 10%”, and the word “about” has not been defined in the specification of the instant application and thus permits some tolerance.

As noted above, the reference teaches overlapping ranges of particle size distribution and shape factor with the present claims, and overlapping ranges have been held to establish *prima facie* obviousness. Therefore, it would have been obvious, at the time of the invention, to have selected the overlapping portion of the range because overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

Johns et al. do not expressly teach that said kaolin is from a secondary kaolin deposit.

It is to be noted that applicants are claiming a product and the limitation of how the kaolin is obtained (i.e. from what source) is a process limitation and it is well established that the patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product

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was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

In the alternative, Willis et al., drawn to paper coating pigments including kaolin which results in pigments possessing opacification, smoothness, and printability advantages, disclose the use of kaolin crudes of Rio Capim area of Para, Brazil, in pigment production because such crudes are capable of providing delaminated kaolin pigments having both desirable low viscosity and optical properties (Abstract; column 2, lines 60-68). Additionally, Willis et al. disclose that said kaolin deposits contain extensive sedimentary formations (column 5, lines 5-10).

In view of the above teachings of Willis, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified Johns et al. in order to expressly disclose the use of sedimentary kaolin from the Para State region of Brazil motivated by the fact that said kaolin crudes from such deposits provide delaminated kaolin pigments having both desirable low viscosity and optical properties. It is to be noted that since Johns teaches kaolin products used to make papers, this product, as would be appreciated by the skilled artisan, would be the pigment used to make the paper absent any specific clear reason otherwise. In view of this, the derivation of kaolin having the properties defined by John from any region is clearly within the scope of the skilled artisan.

In addition, it is to be noted that since John does not specifically limit the kaolin to any specifically derived region, this would clearly suggest to the skilled artisan that said kaolin can be derived from any and all regions, including the claimed one, as is evident

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by the secondary reference absent clear any specific evidence of criticality for the claimed region of derivation.

With reference to "A pigment product" recitation in claim 1, it is to be noted that this is considered an intended use statement. With reference to intended use statements, it is to be noted that MPEP § 2111.02 states:

During examination, statements in the preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the recited purpose or intended use results in a structural difference (or, in the case of process claims, manipulative difference) between the claimed invention and the prior art. If so, the recitation serves to limit the claim. See, e.g., *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963).

In addition, John claims a kaolin (i.e. pigment) product.

Regarding claim 2, Willis et al. disclose the use of sedimentary deposits of kaolin from the Rio Capim area of Para, Brazil because of its advantageous properties (column 2, lines 60-65).

Regarding claims 6-9, Johns et al. disclose a shape factor of at least 30 (page 7, lines 29-31). It is noted that there is overlapping ranges of shape factor in the reference with the ones instantly claimed in said claims; overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

Regarding claims 10-12, Johns et al. disclose steepness of at least 32 (page 7, lines 13-15), which has overlapping ranges with the ones instantly claimed in claims 10-

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12; overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05

Regarding claim 13, it is noted that said claim is a product-by-process claim.

With reference to product-by-process claims, MPEP § 2113 states:

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

**Claims 20-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Johns et al. alone or in view of Willis et al. as applied to claim 1 above, and further in view of US Patent No. 6,284,034 to Hiorns et al. and US Patent No. 6,402,826 to Yuan et al.

Regarding claims 20-25, Johns et al. alone or in view of Willis et al., as set forth above teach kaolin product that meets the claimed size requirements alone with the claimed shape factor and steepness requirements. Johns et al. alone or in view of Willis et al. is silent about the kaolin product being used as a coating composition along with an adhesive or binder.

Hiorns et al., drawn to a coating composition (i.e. to coat paper) comprising (1) kaolin wherein at least 90% of the particles may have an esd less than 2µm (Abstract;

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column 2, lines 10-16, and 54-65) and (2) binders or adhesives. Furthermore, Hiorns et al. disclose that said adhesives (or binder) may be starch or other binders; additionally, the reference points to the use of non-starch adhesives as well (column 3). Moreover, the reference discloses that the content of the adhesive or binder is from 1% to 70% by weight of the dry pigment (i.e. kaolin). Additionally, Hiorns et al. disclose that a paper is coated with the above coating composition using a calendering procedure; therefore, it is apparent that calendaring is performed (column 3, lines 64-66).

Yuan et al., teach in column 3, lines 8-12 the functional equivalence of kaolin products being used as either a paper filler or a paper coating composition.

Although Johns et al. alone or in view of Willis et al. does not disclose that the kaolin product is being used as a coating composition along with an adhesive or binder, the concept of the application of the kaolin according to these references in a coating composition would have been of routine knowledge in the art, thus obvious, motivated by the fact that Yuan et al. teach the functional equivalence of kaolin products being used as either a paper filler or a paper coating composition. In view of this functional equivalence as established above, the skilled artisan would have clearly appreciated that the kaolin product defined by Johns et al. alone or in view of Willis et al. can be applied to any known conventional paper coating such as the one clearly outlined by Hiorns. Furthermore, Hiorns et al. teach that kaolin products (similar kaolin size) provide smooth and gloss surfaces when used as coating. Thus, this beneficial result defined by Hiorns also motivates the skilled artisan to apply the pigment of Johns et al. alone or



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in view of Willis et al., as a coating absent clear and convincing reasons as to why one can not and would not ever use kaolin in a coating composition.

**Claims 14-16 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Johns et al. alone or in view of Willis et al. as applied to claim 1 above, and further in view of WO 99/51815 to Husband et al.

Regarding claims 14-16 and 18, Johns et al. alone or in view of Willis et al., as set forth above teach kaolin product that meets the claimed size requirements alone with the claimed shape factor and steepness requirements.

Johns et al., further, disclose the process of preparing kaolin which comprises preparing an aqueous feed suspension of kaolin, treating the kaolin of feed suspension by attrition grinding in a grinding vessel, classifying the product obtained so far, and after going through a few other steps, obtaining the final product (Abstract; page 2)

Johns et al., however, do not expressly disclose grinding the aqueous suspension such as the shape factor of kaolin increases by at least about 10 or 15 nor does the reference or the combination of Johns et al. and Willis et al. disclose combining a coarse kaolin with the first feed suspension.

Nevertheless, it would have been obvious to one of ordinary skill in the art to modify Johns et al. or for that matter, the combination of Johns et al. in view of Willis et al. to increase the shape factor of kaolin through attrition grinding motivated by the fact

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that Husband et al., drawn to coating composition comprising processed kaolin having a particle size distribution such that at least 80% by weight of the particles have a size of less than  $2\mu\text{m}$  and not less than 12% by weight of the particles have a size of less than  $0.25\mu\text{m}$ , teach that attrition grinding increase the shape factor of kaolin clay by at least 10, preferably at least 20 (Abstract; page 9). Furthermore, Husband et al. disclose a process of processing kaolin in which in an embodiment of said process, a coarse component obtained from classifying a kaolin clay may be among the raw materials (page 9 and 10). It is noted that Husband et al., generally disclose a process steps which comprises mixing raw kaolin with water to form an aqueous suspension, subjecting the suspension to attrition grinding to increase the average shape factor of kaolin clay by at least 10, preferably at least 20, and after a few steps, obtaining the final product. Additionally, Husband et. al. disclose obtaining coated paper having higher gloss and brightness by blending 75 parts by weight of a defined high shape factor kaolin produced and 15 parts by weight of a fine kaolin clay having a relatively high shape factor of 35 (page 40).

The two references are from similar field of art.

**Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Johns et al. alone or in view of Willis et al. and further view of Husband et al. as applied to claims 14 and 16 above, and further in view of US Patent No. 6,003,795 to Bown et al.

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Regarding claim 17, the combination of Johns et al. alone or in view of Willis et al. and further in view of Husband et al. disclose a method of processing kaolin clay wherein the raw kaolin is mixed with water to form a suspension to which a coarse fraction may be added, then the suspension is grinded and through the grinding the shape factor is increased by a factor of at least 10 or 20, finally after applying a few other steps such as classification, the final product is obtained as detailed above.

The combination of references does not expressly disclose a multistage attrition grinding.

Bown et al., drawn to improved method for preparing an aqueous suspension of an inorganic particulate material, wherein after treating said material, it may be used as a paper coating pigment (column 1, lines 1-5; column 2, lines 52-57). Bown et al, further, disclose that it is highly desirable for pigments incorporated into paper coating compositions to have a particle size distribution such that a major portion of the particles have an esd of less than 1 $\mu$ m because such finely divided pigments makes it possible to produce coated paper having very good smoothness and gloss (column 1, lines 19-25). Thus, Bown et al. disclose preparing a concentrated aqueous suspension of a finely ground particulate material by a multistage grinding process, such as at least three grinding stages (column 2, lines 17-21; column 3, lines 15-20; column 4, lines 5-30).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Johns et al. alone or in view of Willis et al. and further view of Husband et al. in order to expressly disclose a multistage grinding as that taught by Bown et al. motivated by the

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fact that this provides finely pigment particles which are advantageous in paper coating composition as detailed above.

**Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Johns et al. alone or in view of Willis et al. and further view of Husband et al. as applied to claim 14 above, and further in view of US Patent No. 5,089,056 to Shi et al.

Regarding claim 19, the combination of Johns et al. alone or in view of Willis et al. and further in view of Husband et al. disclose a method of processing kaolin clay wherein the raw kaolin is mixed with water to form a suspension to which a coarse fraction may be added, then the suspension is grinded and through the grinding the shape factor is increased by a factor of at least 10 or 20, finally after applying a few other steps such as classification, the final product is obtained as detailed above.

The combination of references does not expressly disclose treating the suspension with a bleaching agent.

Shi et al., drawn to opacifying pigments with enhanced light scattering properties for use as a paper coating or filler material which are produced from kaolin, disclose the use of leaching the reaction product with iron reducing agent such as sodium hydrosulfite to remove discoloring constituents (Abstract; column 1, lines 6-9, and 55-60; column 2, lines 1-10).

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Therefore, at the time of the invention, it would have been obvious to modify Johns et al. alone or in view of Willis et al. and further view of Husband et al. in order to include the use of a leaching agent such as sodium hydrosulfite motivated by the fact that kaolin, as well settled in the art, contains many discoloring constituents and impurities not desirable for paper coating compositions which need to be removed from kaolin suspension.

### ***Response to Arguments***

Applicant's arguments, filed July 9, 2008, with respect to the rejection(s) of claim(s) 3-5 and 13-25 under Title 35 U.S.C 103(a) over Cummings et al. in view of secondary reference(s) have been fully considered and with reference to the point that Cummings et al. can not be considered a prior art, the rejections which relied on said reference have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made as detailed above.

Therefore, instant action is a Non-Final action.

Nevertheless, Applicants' arguments filed July 7, 2008 with respect to other references have been fully considered but they are not persuasive as detailed out below.

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Applicants have argued that Johns et al. reference has been misinterpreted in that where said reference discloses not less than 30% by weight has a particle size of less than 2 $\mu$ m, the reference is made to the feed suspension.

The Examiner, respectfully, submits that said statement can be found in claim 11 of the reference and it is clear that this is referring to the kaolin product and not the feed, as applicants argue.

Applicants have argued that the *prima facie* case of obviousness based on overlapping ranges is rebuttable by showing the criticality of the claimed ranges.

The Examiner, respectfully, submits that no hard or tangible evidence has been shown to compare the results of the prior art and that of the instant invention to show the unexpected results or the criticality of the claimed ranges. It is to be noted that arguments cannot take the place of evidence. See MPEP § 2145.

Applicants have argued that Johns et al. is directed to the use of kaolin products in paper, but the instant invention recites a pigment product.

The Examiner, respectfully, submits that “a pigment product” as recited in instant claims is an intended use and does not add patentable weight to the examination of the claims; while the Examiner has found a product/composition which meets the particle size, shape factor and steepness limitations recited in instant claim 1, it is expected that said product/composition can be used in any field absence evidence showing the

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contrary. Furthermore, it is well settled in the art that kaolin has been used in both paper industry and as a pigment.

It is further noted that both Johns et al. and Willis et al. are related to paper (making or coating papers, etc.); furthermore, Willis et al., as noted in the previous Office Action, teach that the crude kaolin of Rio Capim area of Para Brazil is capable of providing delaminated kaolin pigments having both desirable low viscosity and optical properties.

### ***Allowable Subject Matter***

**Claim 5** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art fail to suggest or disclose a composition comprising kaolin having a particle size distribution wherein from about 14% to about 18% by weight of the particles have an equivalent spherical diameter of 0.25 $\mu$ m or less as recited in claim 5. Specially the prior art do not disclose or suggest such a kaolin as indicated in the above lines wherein the kaolin has a shape factor and steepness which would meet the limitation of claim 1.

### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEGAH PARVINI whose telephone number is (571)272-2639. The examiner can normally be reached on Monday to Friday 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. P./  
Examiner, Art Unit 1793

/Michael A Marcheschi/  
Primary Examiner, Art Unit 1793